



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,209	02/12/2002	Charles E. Taylor	112440-727	4379

29190 7590 03/15/2006

BELL, BOYD & LLOYD LLC  
P.O. BOX 1135  
CHICAGO, IL 60690-1135

EXAMINER
----------

TRAN, THAO T

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/074,209

Applicant(s)

TAYLOR ET AL.

Examiner

Thao T. Tran

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 102-126, 154, 155, 158-165 and 167-175 is/are pending in the application.
- 4a) Of the above claim(s) 155 and 170 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 102-126, 154, 158-165, 167-169 and 171-175 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/22/04, 7/20/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of claims 102-126, 154, 158-165, 167-169, and 171-175 in the reply filed on 3/21/2005 is acknowledged.
2. Claims 155 and 170 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/21/2005.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 117 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 117 is indefinite due to the use of "proximal to the first end". It is unclear to the examiner to which part of the apparatus the "first end" belongs. If Applicants mean to indicate that this is the first end of the second electrodes, please state so.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 102-126, 154, 158-165, 167-169, and 171-175 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon (US Pat. 5,215,558) or Yu (US Pat. 5,037,456) in view of Byerly (US Pat. 2,826,262).

Moon teaches an electrical dust collector which includes an ion generator; the ion generator comprising a first array of electrodes 1; a second array of electrodes 2; the first and second electrodes are ion emitter and ion collectors respectively; an array of auxiliary electrodes 4 between the first and second arrays; an array of accelerating electrodes 3 interposed between the second electrodes and partially downstream from the second electrodes. Thus, these accelerating electrodes are trailing electrodes. Moon further teaches the accelerating electrodes 3 also collect dust particles as well as the collecting electrodes 2 (see Fig. 1; col. 1, ln. 10-27).

Yu teaches an electrical dust collector, comprising a discharge section 1 and a dust collecting section 4. The discharge section comprises wire electrodes 3 that are positively charged. The dust collecting section comprises collecting plate electrodes 6 that are negatively charged. The plate electrodes 6 are arranged in three rows 4a, 4b, and 4c, for collecting dust particles (see Figs. 2-4; col. 1, ln. 42-45; col. 2, ln. 14-51). Thus, those plate electrodes 6 downstream of the airflow are trailing electrodes. The plate electrodes are parallel to one another.

Neither Moon nor Yu teaches at least a portion of the trailing electrodes to be triangular.

Byerly teaches a collecting electrode in an electrical precipitator, comprising a series of triangular baffles with pointed ends to provide improved gas flow patterns and properties, and thus preventing particle erosion of the electrode surface while maintaining efficient corona current densities and high potential field (see Figs. 3-5; col. 58-72; col. 3, ln. 44-60).

Therefore, it would have obvious to one of ordinary skill in the art, at the time the invention was made, that to have employed the collecting electrodes with the configuration, as taught by Byerly, in the apparatus of Moon or Yu, for the purpose of obtaining improved gas flow patterns and properties with efficient corona current densities and high potential field, while preventing particle erosion of the electrode surface.

#### *Response to Arguments*

7. Applicant's arguments filed 4/16/2004 have been considered but are moot in view of the new grounds of rejection.

Note: Applicants contend that the accelerating electrodes in the invention of Moon do not operate at the same polarity. This contention is correct. However, in col. 1, ln. 13-20, Moon discloses that the accelerating electrodes as well as the collecting electrodes collect dust. And Fig. 1 of the reference shows that the accelerating electrodes are connected to the voltage slightly more positive than that of the collecting electrodes, but much more negative than that of the ionizing electrodes. Therefore, the collecting electrodes and the accelerating electrodes are both negative with respect to the ionizing electrodes, and the voltage at the accelerating electrodes would be proximate to that of the collecting electrodes.

*Conclusion*

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 9:00 a.m. - 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tt  
March 7, 2006

A handwritten signature in black ink that reads "Thao Tran". The signature is written in a cursive, flowing style.

**THAO T. TRAN  
PATENT EXAMINER**